CLAIMS

1.   A method of concealing spatial errors in an image comprised of a stream of coded macroblocks, comprising the steps of:

    examining each macroblock for pixel data errors, and if any such errors exist, then:

    weighting at least one macroblock from at least one reference picture to yield a weighted prediction for concealing a macroblock found to have pixel errors.

2.   The method according to claim 1 further comprising the step of weighting at least one macroblock using implicit mode weighted prediction in accordance with the JVT video coding standard.

3.   The method according to claim 1 further comprising the step of weighting at least one macroblock using explicit mode weighted prediction in accordance with the JVT video coding standard.

4.   The method according to claim 2 further comprising the step of using the implicit mode for temporal concealment with use of bi-predictive compensation.

5.   The method according to claim 1 further comprising the step of weighting at least one macroblock using bi-predictive compensation in accordance with the type of the reference picture.

6.   The method according to claim 1 further comprising the step of weighting at least one macroblock to limit error propagation when at least a portion of the at least one reference picture was previously concealed.

7.   The method according to claim 6 further comprising the step of weighting at least one macroblock to limit error propagation when at least a portion of the at least one reference picture was iteratively concealed.

8.   The method according to claim 1 further comprising the step of weighting each of at least two different macroblocks from different reference pictures to yield a weighted prediction for concealing a macroblock found to have pixel errors.

5   9.   The method according to claim 8 further comprising the weighting the at least one macroblock of a current picture and a neighboring picture .

10.   The method according to claim 1 further comprising the step of weighting the at least one macroblock when one of a fading or dissolve is detected.

10

11.   The method according to claim 1 further comprising the step of weighting the at least one macroblock using one of an implicit and explicit mode in accordance with prescribed criterion.

15   12.   The method according to claim 11 further comprising the step of weighting the at least one macroblock using one of an implicit and explicit mode in accordance with criterion associated with one of a spatial and temporal neighboring macroblock, respectively.

13.   The method according to claim 12 further comprising the step of weighting the at 20   least one macroblock using one of an implicit and explicit mode in accordance with criterion associated with one of a spatial and temporal neighboring macroblock, respectively, that are correctly received.

14.   The method according to claim 11 further comprising the step of weighting at the 25   least one macroblock using one of an implicit and explicit mode in accordance with criterion associated the reference picture type.

15.   The method according to claim 3 further comprising the step of estimating a weighting value for weighting the at least one macroblock from a temporal neighboring 30   macroblock.

16.   The method according to claim 15 further comprising the step of estimating the weighting value from the temporal neighboring macroblock by curve fitting to find an average intensity value from which such estimated weighting value is derived.

17.   The method according to claim 15 further comprising the step of estimating the weighting value from a temporal neighboring macroblock based on a linear fading/dissolve in the reference picture.

18.   The method according to claim 7 further comprising the step of estimating a weighting value for weighting the at least one macroblock from at least one spatial neighboring macroblock.

19.   The method according to claim 9 further comprising the step of estimating weighting value for weighting the at least one different macroblock from at least one of a spatial and temporal neighboring macroblock in accordance with prescribed criterion.

20.   The method according to claim 19 wherein the prescribed criterion includes assigning the at least one spatial neighboring macroblock a higher priority.

21.   The method according to claim 1 further comprising the step of selecting the reference picture from a collection of recently stored pictures.

22.   A method of concealing spatial errors in an image comprised of a stream of coded macroblocks, comprising the steps of:
        examining each macroblock for pixel data errors, and if such errors exist, then:
        weighting each of at least two different macroblocks from at least two different reference pictures to yield a weighted prediction for concealing a macroblock found to have pixel errors.

23.   A decoder for concealing spatial errors in an image comprised of a stream of coded macroblocks, comprising
        a detector for examining each macroblock for pixel data errors; and

an error concealment parameter generator for generating values for weighting at least one
macroblock from a reference picture for concealing a macroblock found to have pixel errors.

24.   The decoder according to claim 23 wherein the detector comprises a variable
length decoder block.

25.   The decoder according to claim 23 wherein the error concealment parameter
generator generates values for weighting the at least one macroblock using implicit mode
weighted prediction in accordance with the JVT video coding standard.

26.   The decoder according to claim 23 wherein the error concealment parameter
generator generates values for weighting the at least one macroblock using explicit mode
weighted prediction in accordance with the JVT video coding standard.

27.   The decoder according to claim 23 wherein the error concealment parameter
generator generates values for weighting the at least one macroblock to limit error propagation
when at least a portion of the reference picture was previously concealed.

28.   The decoder according to claim 23 wherein the error concealment parameter
generator generates values for weighting the at least one macroblock when one of a fading or
dissolve is detected.

29   The decoder according to claim 23 wherein the error concealment parameter
generator generates values for weighting the at least one macroblock using one of an implicit and
explicit mode in accordance with prescribed criterion.

30.   The decoder according to claim 29 wherein the error concealment parameter
generator generates values for weighting the at least one macroblock in accordance with criterion
associated with one of a spatial and temporal neighboring macroblock.

31.   The decoder according to claim 29 wherein the error concealment parameter generator generates values for weighting the at least one macroblock in accordance with criterion associated with one of a spatial and temporal neighboring macroblock that are correctly received.

5   32.   The decoder according to claim 29 wherein the error concealment parameter generator generates values for weighting the at least one macroblock in accordance with criterion associated the reference picture type.

33.   The decoder according to claim 23 wherein the error concealment parameter
10   generator generates the value for weighting the at least one macroblock by estimating the value for from a temporal neighboring macroblock.

34   A decoder for concealing spatial errors in an image comprised of a stream of coded macroblocks, comprising
15   a detector for examining each macroblock for pixel data errors; and
          an error concealment parameter generator for generating values for weighting each of at least two different macroblocks from at least two different reference pictures to yield a weighted prediction for concealing a macroblock found to have pixel errors.